Michigan Senate Energy Policy and Public Utilities Committee
March 26, 2009

The U.S. Civilian Radioactive Waste Management Program and the Nuclear Waste Fund – Implications for Michigan

Background on U.S. Nuclear Industry as it relates to High-Level Nuclear Waste

- 1946 Atomic Energy Act – began federal promotion of nuclear energy for producing electricity – Atoms for Peace
- 1954 amendments allowed for commercial electric energy production from nuclear power
- Waste was to be the responsibility of the federal government
- 1955 National Academy of Sciences (NAS) was given assignment of determining a sound nuclear waste management program
- 1957 NAS report concluded that deep geologic disposal would be the solution
- 1982 Nuclear Waste Policy Act finally formalized the assumed policy

Nuclear Waste Policy Act of 1982 through Today

- Federal government would site and build a deep underground disposal facility
- Characterize three sites to identify two suitable repositories – one east, one west
- Begin to take waste from plant sites for disposal by January 31, 1998
- The program would be paid for by a "1 mil per kWh fee" on every kWh electricity sold from nuclear power plants - paid by customers
- Utilities with nuclear power plants were required to sign contracts to pay the Nuclear Waste Fund fee as a condition to getting a license to operate the plant
- 1987 amendments limited characterization to one site – Yucca Mountain, NV
- Scientific characterization of Yucca Mountain took about 15 years
- 1998 deadline for federal government beginning to take nuclear waste comes and goes without any waste moving from plant sites
- 2002 DOE Secretary recommendation to President to designate Yucca Mountain as the nation's nuclear waste repository
- 2002 President names Yucca Mountain as nation's nuclear waste repository, allowing the Department to make an application to the U.S. Nuclear Regulatory Commission
- Nevada Governor vetoes Presidential designation of Yucca Mountain
- U.S. Congress overrides NV Governor veto
- 2008 U.S. DOE submits its application to U.S. NRC and NRC accepts application, beginning the review process expected to take 3 - 5 years
- The application is only for the license to construct the repository – once (or if) a license is issued, the DOE can construct the repository, but would need to return to the NRC to obtain a license to operate the repository
- Best case scenario, the U.S. DOE does not expect to open the repository until at least 2020

Current State of the Federal Nuclear Waste Program:

- **The Federal Government has our money**
- **We have their waste**

Key Issues

The federal nuclear waste repository problem has suffered from two problems:

- Mismanagement
- Chronic Underfunding – over past six years, more than $1 billion has been cut from the Administration's budget request.
    - Approximately $750 million collected nationally into NWF in 2008
    - FY 2009 Budget request was $494 million
    - Reduced to $384 million by Congressional rules for continuing resolution
    - Reduced further by Congress to $288 million with only $145 million coming from the payments into the NWF
    - About $600 million into NWF

Nuclear Waste Fund – State Payments

- About $1.2 billion from electricity generated by nuclear power plants located in Michigan
- About $700 million has been from Michigan's ratepayers
- About $ 45 million annually from Michigan's ratepayers
- More than $30 billion total has been collected into the NWF

Consumer Interest

- The money comes from rates
- Ratepayers have paid several times for this program
    - Original plant storage
    - Payments into NWF
    - Plant storage consolidation and dry-cask storage

Efforts to Fix the Program

- 1993 Nuclear Waste Strategy Coalition was formed by MI, MN and FL
- 1993 Letter to DOE with DOE responding it had no obligation to take the waste absent a permanent repository
- Lawsuits by States:
    - Indiana Michigan Power Co. v. U.S. DOE – DOE has a legal obligation to take the waste, even in absence of a repository
    - Northern States Power Co. v. U.S. DOE – DOE cannot excuse itself from the obligation
    - The Court, however, refused to issue Writ of Mandamus compelling action from DOE

Escrow Option
MPSC opened a docket in Case U-11314 in January 1997 to examine the issues related to ratepayer contributions to the federal Nuclear Waste Fund

What would escrow look like and how it would work?
The basic concept of directing ratepayer payments into an escrow account is relatively simple. Upon a particular date, all subsequent ratepayer financed payments for the NWF would be diverted into an externally managed escrow account. The utility that was to receive the funds could elect to continue making payments to the NWF using shareholder funds, or cease such payments completely. Funds placed into escrow could eventually be released to the federal government upon an acceptable resolution of the nuclear waste storage and disposal problems. Examples of an acceptable resolution could be one of the following: 1) opening of the permanent repository to begin accepting SNF, 2) opening up a federal interim storage facility to being accepting SNF, or 3) the federal government actually beginning to take the SNF from the plant sites for storage or disposal.

Arguments for Escrow
- Federal Government has failed to open a repository more than 11 years overdue (1/1998) with no reasonable projections for completing and licensing the repository as 2020 is best case scenario
- If Federal Government eventually totally defaults on the program, money will be needed to managing waste
- There is a possible unexpended fund balance of more than $20 billion

Arguments against Escrow
- Federal government could claim breach of contract
- Utilities could lose operating license
- Utilities could lose their place in the acceptance queue
- Could jeopardize damage claims against federal failure to adhere to terms of contract
- Places utility into position of having to decide whether to continue making payments into NWF
- Ratepayers would see no immediate rate relief

Alternatives to Escrow
Fee Adequacy Assessment
- Adjust the fee to reflect only what is being expended annually
- Would result in reduction of fee

NUCLEAR WASTE FUND
RATEPAYER PAYMENTS BY STATE
THROUGH 3-31-08 (MILLIONS OF DOLLARS)

STATE	PAYMENTS 1 mill/kwh, One Time+Int	RETURN ON INVESTMENTS as of 9/30/07	TOTAL (PAY+RETURN)	DEBT*	FUND ASSETS** (TOTAL + DEBT)
AL	490.0	334.0	824.0	0	824.0
AR	315.9	215.3	531.2	173.2	704.4
AZ	233.5	159.2	392.7	0	392.7
CA	925.5	630.9	1556.4	0	1556.4
CO	0.2	0.1	0.3	0	0.3
CT	267.2	182.1	449.3	353.5	802.8
DE	41.7	28.4	70.1	0	70.1
FL	774.3	527.8	1302.1	0	1302.1
GA	610.5	416.2	1026.7	0	1026.7
IA	225.0	153.4	378.4	44.6	423.0
IL	1654.5	1127.8	2782.3	959.2	3741.5
IN	226.7	154.5	381.2	226.8	608.0
KS	120.0	81.8	201.8	0	201.8
KY	132.3	90.2	222.5	0	222.5
LA	285.8	194.8	480.6	0	480.6
MA	320.2	218.3	538.5	161.1	699.6
MD	354.8	241.9	596.7	0	596.7
ME	47.5	32.4	79.9	115.3	195.2
MI	274.1	186.8	460.9	195.4	656.3
MN	293.5	200.1	493.6	0	493.6
MO	224.8	153.2	378.0	5.1	383.1
MS	146.1	99.6	245.7	0	245.7
NC	1385.9	944.7	2330.6	0	2330.6
ND	16.4	11.2	27.6	0	27.6
NE	174.2	118.7	292.9	0	292.9
NH	72.1	49.1	121.2	23.5	144.7
NJ	648.3	441.9	1090.2	194	1284.2
NM	67.9	46.3	114.2	0	114.2
NY	748.4	510.2	1258.6	498.5	1757.1
OH	408.3	278.3	686.6	32.2	718.8
OR	75.1	51.2	126.3	0	126.3
PA	1220.3	831.9	2052.2	65.6	2117.8
RI	4.8	3.3	8.1	6	14.1
SC	621.6	423.7	1045.3	0	1045.3
SD	6.1	4.2	10.3	0	10.3
TN	494.4	337.0	831.4	0	831.4
TX	687.1	468.4	1155.5	0	1155.5
VA	634.5	432.5	1067.0	0	1067.0
VT	90.5	61.7	152.2	139.7	291.9
WA	151.2	103.1	254.3	0	254.3
WI	394.2	268.7	662.9	0	662.9
SUBTOTAL	15865.4	10814.9	26680.3	3193.7	29874
FEDERAL	19.8	13.5	33.3	0	33.3
INDUSTRY	16.8	11.5	28.3	0	28.3
TOTAL	15902	10839.9	26741.9	3193.7	29935.6

* Funds owed for fuel burned before 1983 but not yet paid by utilities (as allowed by DOE contract)

** before withdrawals for expenditures by DOE

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BEFORE THE
MICHIGAN SENATE
COMMITTEE ON TECHNOLOGY AND ENERGY

STATEMENT OF GREG R. WHITE ON BEHALF OF THE MICHIGAN PUBLIC SERVICE COMMISSION

May 12, 1999

Introduction

Good Afternoon. I am Greg White, executive assistant to Commissioner Robert Nelson of the Michigan Public Service Commission. I am also Chairman of the Staff Subcommittee on Nuclear Issues - Waste Disposal of the National Association of Regulatory Utility Commissioners. I am here today to testify on behalf of the Commission. The Commission is grateful for the opportunity to express its support for House Concurrent Resolution No. 29, which urges the federal government to fulfill its obligations to establish a permanent repository for high-level nuclear waste.

Historical Perspective of Nation's Nuclear Waste Disposal Program

Let me begin with a very brief history of the federal waste disposal program that will help to provide context for this testimony. Radioactive waste was first produced in the development of nuclear weapons during WWII. In 1946, the Atomic Energy Act began the federal promotion of the public use of nuclear energy. In 1954, the Act was amended to allow for commercial electric energy production via nuclear power. From the beginning, the management and disposal of radioactive waste by both defense and commercial efforts was to be the responsibility of the federal government. However, its disposition was largely ignored because a "technological solution" was always envisioned. The scientists working on the development of the production technology were excited about the new technology of nuclear power, but didn't want to be assigned to the disposal or "garbage" side.

In 1955, the National Academy of Sciences (NAS) was given the assignment of determining a scientifically sound nuclear waste management program. The NAS report, completed in 1957, essentially concluded that deep geologic disposal would be the solution. That is still the prevailing course.

In 1982, the U.S. Congress passed the Nuclear Waste Policy Act, which formalized the nation's long standing assumed policy that the federal government would bear the responsibility of taking care of civilian nuclear waste as it had the same responsibility for defense-related waste. In 1987, the 1982 Act was amended to direct the DOE to characterize only one site - Yucca Mountain, Nevada as the candidate for the permanent disposal repository. Now, some 17 years after the passage of the Nuclear Waste Policy Act, and more than 50 years after the planned commercialization of nuclear power, we are still without the fundamental policy framework necessary to ensure that the federal government accepts and disposes of nuclear wastes in a timely and efficient manner. Certainly, without some form of intervention, whether it be Congressional legislation or a mandate from the Courts, we should not expect the federal government to comply with its legal obligations to begin accepting, removing, storing and disposing of spent nuclear fuel or high-level nuclear waste any time soon.

The Consumer Interest and Concern in the Nation's Nuclear Waste Program

Next, I would like to outline the interests and concerns of the consumers of electricity regarding the U.S. Department of Energy's (DOE) Civilian Radioactive Waste Management program. This program has been a source of deep concern and enormous frustration to Michigan's electricity ratepayers and the Commission for many years. Our first concern is the huge amounts of money that have been collected from Michigan's electric utility ratepayers to pay for the federal waste program. Customers of those utilities that operate nuclear power plants in Michigan have contributed approximately $700 million into the Nuclear Waste Fund. Nationally, utility ratepayers pay more than $600 million per year into the Nuclear Waste Fund, not including interest on the unspent balance, which totals another $400 million per year. This Fund, which is supported solely by the Nation's electricity ratepayers, has accumulated more than $15 billion

since 1983. Despite the size of the fund, no permanent facility has been developed and not one ounce of waste has been removed from Michigan.

In effect, we are paying three times for the storage and disposal of the nuclear waste. First, utility ratepayers have paid for the storage of nuclear waste at nuclear power plants through the rates paid to cover the capital costs of planned on-site storage. Secondly, ratepayers have paid for the federal nuclear waste management and disposal program supposed to be run by the DOE through the 1 mil per kilowatt hour fee they pay to their electric utilities on the generation of electricity from nuclear generating plants. These are the fees that go directly from the utilities into the Nuclear Waste Fund to the tune of $15 billion. Now, utility ratepayers are being asked to pay for a third time - - for expanded on-site storage as a result of the federal governments failure to meet the deadlines prescribed in the 1982 Nuclear Waste Policy Act.

The second reason for our concern also relates to consumer costs. The effective management and permanent disposal of nuclear waste are essential to minimize the life cycle costs of the existing nuclear plants that generate about 20 percent of the electricity used in the State. Cost increases for expanding on-site storage, reactor decommissioning and centralized disposal of nuclear wastes increases the costs of nuclear energy overall, which in turn, can have a significant adverse affect on energy costs to consumers. This problem is becoming particularly acute as our State moves into an era of competitive markets in the electric utility industry. Moreover, nuclear generation provides significant air emission benefits that will be jeopardized if the unresolved waste problem renders these plants uneconomic.

Yet another reason is more of a moral nature. That is, the 1982 Nuclear Waste Policy Act established a regime in which the consumers of nuclear generated electricity would pay for the federal nuclear waste management and disposal program in exchange for the federal government's obligation to manage and dispose of the waste. The citizens of Michigan and the other 40 states

that use electricity generated by nuclear power plants, have kept our end of the deal. The federal government, which officially defaulted on its obligation to begin accepting the waste on February 1, 1998, has not.

A member of the Michigan Commission first testified before the U.S. Congress as far back as 1985, to warn Congress of contractor control problems in the federal program, and to warn of a lack of procedures to control excess program costs. Members of Michigan's Public Service Commission have testified before Congress on this issue a number of times since. Most recently, MPSC Chairman John Strand testified before the both the U.S. House and the U.S. Senate in this, the 106th Congress. On February 10, 1999, Chairman Strand testified before the U.S. House Subcommittee on Energy and Power in support of passing H.R. 45, the Nuclear Waste Policy Act of 1999. H.R. 45 was introduced by Michigan Congressman Fred Upton and is intended to fix problems with the federal nuclear waste program. On March 24, 1999, Chairman Strand testified before the U.S. Senate Committee on Energy and Natural Resources in support of the Senate version of the Nuclear Waste Policy Act of 1999, S. 608. In both instances, Chairman Strand provided the Congress with the perspective of Michigan's electricity consumers and the State's interests, in general. The Michigan PSC continues to be active in the development of federal legislation to fix the federal nuclear waste program. Our three-part message is clear and consistent, we support federal legislation that will 1) result in moving the waste from our plant sites in Michigan to a federal storage site or permanent repository in a safe, timely, and cost effective manner, 2) preserves the ratepayers payments into the Nuclear Waste Fund for this intended purpose, and 3) protects the ratepayers from future cost increases.

Taking Our Case to the Federal Courts

In 1995, the States and the utilities were compelled to file suit against the U.S.

Department of Energy by the DOE's interpretation of the 1982 Act. In its "Final Interpretation" of the Act, the DOE concluded that it had no obligation to accept wastes from civilian reactors, absent a final repository. Given the DOE's dreadful record in its site characterization efforts, and given the huge amounts of money already paid to the federal government, this position was entirely unacceptable. Led by the State of Michigan and the Michigan Public Service Commission, 36 states took part in lawsuits seeking to compel the federal government to perform its obligations to begin taking nuclear waste. A number of suits were filed and decided in the U.S. Court of Appeals. Final appeals to the U.S. Supreme Court were not taken up, leaving the lower court rulings to stand.

The short summary of the court decisions is this: the DOE is legally obligated to begin taking waste from the utility nuclear generation plants by the now expired deadline of February 1, 1998, but the Act itself doesn't yet require specific performance by the DOE. The practical result, at this time, is a deadlock that can only be corrected by the federal administration choosing to do the right thing by beginning to take the waste to a federal storage facility, or by Congressional action to fix the program.

There is another set of lawsuits pending in the U.S. Court of Federal Claims. These are brought by individual utilities seeking to recoup damages caused by the federal governments failure to begin accepting the waste on time. While the States do not specifically have standing in the U.S. Court of Federal Claims, because we are not parties to a contract between the utilities and the DOE, we are watching these cases with great interest. The DOE has suggested that any damages that would be paid to the utilities for the federal failure should come out of the Nuclear Waste Fund. We strongly oppose this position. To put it bluntly, it would be an outrage if DOE were able to pay for its damages out of the Nuclear Waste Fund. In effect, it would be requiring ratepayers to pay for DOE's failures. Moreover, the Nuclear Waste Policy Act of 1982 suggests

that the Nuclear Waste Fund cannot be used for anything other than storage and disposal activities and not the payment of damages.

Conclusion

In conclusion, the Michigan Public Service Commission is not confident in the DOE's current projections for beginning to accept the waste for disposal in the year 2010. That may be a gross understatement. We are not aware of anyone that believes that projection. If the DOE were to announce that they were pushing back the projected opening of the repository to 2020, I'm afraid that we would be suspicious of that date too. This program has been marked by delay after delay. In fact, the strategy of the DOE seems to be one of finding ways to delay taking nuclear waste, rather than finding ways to meet its legal obligations. Our concerns are not unfounded. In the history of this program, the DOE has met only one deadline, and that, not surprisingly, was the deadline for arranging the contracts with the utilities that began the flow of money from the ratepayers into the Nuclear Waste Fund. The ratepayers have upheld their end of the deal by paying for all of the on-site storage of civilian nuclear waste and by paying more than $15 billion into the Nuclear Waste Fund to pay for the federal program. Michigan's electricity consumers deserve to see progress in a nuclear waste disposal program in which they are already hugely invested.

We believe it is appropriate and timely for the Michigan Legislature to send the message that the federal government must meet its obligations. The Michigan Public Service Commission, therefore, strongly supports the passage of the resolution before you today.

Thank you for your time and attention, I would be pleased to answer any questions.